

pricing, taxes, freight, or delivery schedule. Depending on the implementation, this may be accomplished using specialized routines or may involve incorporation of one or more background planning processes that rely on, for example, transportation and logistics planning packages. The use of such "auxiliary" processes may be optionally 5 delayed until client 12 confirms all or a part of quotation 36.

In one embodiment, fulfillment server 16 provides a pricing engine component that operates according to the needs of the customer. For example, when fulfillment server 16 is implemented in conjunction with a packaged ERP system, the customer may prefer that pricing be managed within the ERP system boundaries. In one 10 embodiment, if fulfillment server 16 manages pricing, each component quotation 34 is first priced out at list and then prevailing discounts are applied based upon pre-specified line, request, or volume-level programs. Multiple discounts may be applicable to a given ATP request 30. Pricing and discount programs may be specified according to the customer, customer location, supplier, agreement, product 15 group, product, or any other suitable parameter or set of parameters.

The multi-dimensional response capability of fulfillment server 16 may present a special problem relative to pricing functionality. That is, if more than one option is presented to the user for a particular request line-item, it may be difficult for fulfillment server 16 to evaluate the order as a whole for discounting purposes. 20 Where multiple component quotations 34 exist for a particular component ATP request 32, pricing for ATP request 30 cannot generally be represented as a simple sum total with discount. Instead, the ATP request price becomes a range with minimum and maximum bounds and is not finalized until the ATP request options are confirmed. At that point, pricing is re-calculated and presented to the user upon 25 promise confirmation.

When fulfillment server 16 has completed evaluating quotation 36 relative to the specified constraints of ATP request 30, and quotation 36 has been determined to meet these requirements, fulfillment server 16 sends quotation 36 to client 12 for review and quotation confirmation. If the requesting client 12 is no longer active, 30 quotation 36 may be stored until it can be queried at a later time. The structure of quotation 36 models that of the originating ATP request 30. Quotation 36, however,

may be potentially more complex than ATP request 30 since it may contain multiple responses for each request line-item and request line-item delivery.

Quotation Attributes

In one embodiment, the quotation is an object having the following attributes or otherwise supporting the following information, in any appropriate combination and without limitation: (1) *quotation ID* - assigned at fulfillment server 16 and may be same as *request ID*; (2) *request ID*; (3) *maximum total price (base currency)* - maximum total price of quotation calculated at fulfillment server 16 in the base currency, representing upper bound of price quotation; (4) *minimum total price (base currency)* - minimum total price of quotation calculated at fulfillment server 16 in the base currency, representing lower bound of price quotation; (5) *maximum total price (customer currency)* - maximum total price of quotation calculated at fulfillment server 16 in customer-preferred currency; (6) *minimum total price (customer currency)* - minimum total price of the quotation calculated at fulfillment server 16 in customer-preferred currency; (7) *quotation status* - fulfillment server 16 updates during life of quotation (e.g., "failed quotation," "pending acceptance," "accepted," "rejected," "acceptance not received"); (8) *date accepted* - date and time quotation confirmation was processed, if any; and (9) *date rejected* - date and time quotation was rejected, if any.

Quotation Line-Item Attributes

In one embodiment, the quotation line-item is an object having the following attributes or otherwise supporting the following information, in any combination and without limitation: (1) *line-item ID* - assigned at fulfillment server 16, accommodating multiple quotation responses per request line-item; (2) *quotation ID* - links quotation to quotation line-item; (3) *product ID* - may not directly correspond to product specified in originating request line-item since an alternate or substitute may be quoted instead; (4) *product UOM* - may not correspond to UOM specified in originating request line-item since ATP server 14 may have responded in different UOM than requested; (5) *offered quantity* - quantity associated with quotation line-item; (6) *offered date* - date quantity will be available, which may represent the shipment date given by ATP server 14 or a coordinated customer delivery date, depending on the implementation; (7) *offered lot* - lot identifier for quotation line-

item; (8) *offered attributes* - list of the category/attribute combinations for quotation line-item; (9) *quotation type* - type of response (e.g., "as requested," "alternate/substitute," "option"); (10) *offered unit price (base currency)* - unit price associated with quotation line-item expressed in the base currency of fulfillment server 16; (11) *offered total price (base currency)* - computed total price associated for quotation line-item expressed in base currency of fulfillment server 16; (12) *offered unit price (customer currency)* - unit price for quotation line-item expressed in customer-preferred currency; (13) *offered total price (customer currency)* - computed total price for the quotation line-item expressed in the customer-preferred currency; (14) *quotation line-item status* - logical parameter fulfillment server 16 updates based on corresponding component quotation status and which indicates whether request line-item succeeded or failed in getting acceptable quotation; (15) *failure reason* - brief description of reason for quotation failing; and (16) *quotation line-item acceptance status* - indicates whether quotation line-item was accepted or rejected and which fulfillment server 16 uses in generating component quotation confirmation transactions to LFM 22 and/or ATP servers 14.

In one embodiment, the quotation line-item delivery is an object having the following attributes or otherwise supporting the following information, in any suitable combination and without limitation: (1) *quotation line-item delivery ID* - assigned at fulfillment server 16 and accommodates multiple quotation responses per request line-item delivery; (2) *quotation line-item ID*; (3) *offered quantity*; (4) *offered date*; (5) *offered lot*; and (6) *offered attributes*.

### Quotation Confirmation Workflow

FIGURE 3 illustrates an example quotation confirmation workflow in which client 12 generates a quotation confirmation 40 based on the quotation 36 and, possibly, input from an associated user. Client 12 sends quotation confirmation 40 to fulfillment server 16, where it is decomposed and evaluated. Fulfillment server 16 sends resulting component quotation confirmations 42 to LFM 22 and/or ATP servers 14 using network 20. LFM 22 and/or ATP servers 14 process component quotation confirmations 42 and generate component promises 44 accordingly. LFM 22 and/or ATP servers 14 then send component promises 44 back to fulfillment server